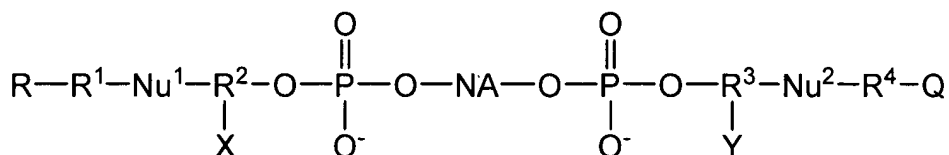


**Listing of Claims:**

1-31. (Canceled)

32. (Previously Presented) A compound having the formula



wherein,

NA is a nucleic acid chain comprising nucleic acid monomers selected from the group consisting of natural nucleic acids, modified nucleic acids and combinations thereof;

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  are linker moieties independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

$\text{Nu}^1$  and  $\text{Nu}^2$  are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

R is a molecular energy transfer donor;

Q is a molecular energy acceptor; and

X and Y are the same or different and are non-nucleic acid stabilizing moieties that interact to bring R and Q into operative proximity, thereby enabling transfer of energy from R to Q.

33. (Previously Presented) The compound according to claim 32, wherein said molecular energy transfer donor is a fluorophore.

34. (Previously Presented) The compound according to claim 32, wherein said molecular energy acceptor is a fluorescence quencher.

1                    35.     (Previously Presented) The compound according to claim 32, wherein X  
2     and Y are both hydrophobic moieties.

1                    36.     (Previously Presented) The compound according to claim 35, wherein X  
2     and Y are members independently selected from the group consisting of saturated hydrocarbons,  
3     unsaturated hydrocarbons, steroids, fatty acids, fatty alcohols and hydrophobic peptides.

1                    37.     (Previously Presented) The compound according to claim 32, wherein  
2     natural nucleic acids are members selected from the group consisting of deoxyribonucleotides,  
3     ribonucleotides and combinations thereof.

1                    38.     (Currently Amended) The compound according to claim ~~37~~ 32, wherein  
2     said modified nucleic acids are peptide nucleic acids.

1                    39.     (Previously Presented) The compound according to claim 32, wherein  
2     said nucleic acid monomers are joined by linkages that are members independently selected from  
3     the group consisting of phosphodiesters and modified phosphodiesters.

1                    40.     (Previously Presented) The compound according to claim 39, wherein  
2     said modified phosphodiesters are members selected from the group consisting of  
3     phosphorothioates and phosphoramidates.

1                    41.     (Previously Presented) The compound according to claim 32, wherein  
2     said nucleic acid chain further comprises a hybridization enhancing moiety.

1                    42.     (Previously Presented) The compound according to claim 41, wherein  
2     said hybridization enhancing moiety is a member selected from the group consisting of  
3     intercalating agents, minor groove binders and modified exocyclic bases.

1                    43.     (Currently Amended) The compound according to claim 32, wherein  
2     R<sup>2</sup>-X and R<sup>3</sup>-Y are independently attached to members selected from the group consisting of a  
3     natural base of said nucleic acid chain, a modified base of said nucleic acid chain, a 3'-hydroxyl

4 group of said nucleic acid chain, a 5'-hydroxyl group of said nucleic acid chain, a 2'-hydroxyl  
5 group of said nucleic acid chain, and a linkage joining nucleic acid groups in said nucleic acid  
6 chain.

1 44. (Previously Presented) The compound according to claim 32, wherein  
2 said compound is immobilized on a solid surface.

1 45. (Previously Presented) A method for amplifying a polynucleotide,  
2 wherein a compound according to claim 32 is a primer in said method, said method comprising:  
3 (a) hybridizing said primer to said polynucleotide; and  
4 (b) amplifying said polynucleotide.

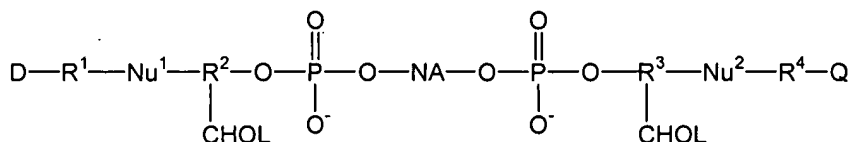
1 46. (Previously Presented) The method according to claim 45, wherein said  
2 amplifying is a member selected from the group consisting of polymerase chain reaction (PCR),  
3 nucleic acid sequence based amplification (NASBA), strand displacement amplification (SDA)  
4 and combinations thereof.

1 47. (Previously Presented) A method for detecting or quantitating a nucleic  
2 acid, wherein the compound according to claim 32 is used as a probe, said method comprising:  
3 (a) hybridizing said compound to said nucleic acid; and  
4 (b) detecting a change in fluorescence of said compound, thereby detecting or  
5 quantitating said nucleic acid .

1 48. (Previously Presented) The method according to claim 47, wherein said  
2 method comprises a member selected from the group consisting of 5'-nuclease assay, rolling  
3 circle amplification and combinations thereof.

1 49. (Previously Presented) A kit for quantitating nucleic acid, said kit  
2 comprising a compound according to claim 32.

1 50. (Previously Presented) A compound having the formula:  
2



wherein,

CHOL is a cholesterol derivative;

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  are linker moieties independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

$\text{Nu}^1$  and  $\text{Nu}^2$  are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

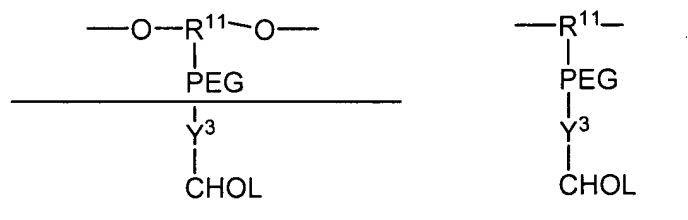
NA is a nucleic acid sequence;

D is a donor of light energy; and

Q is a quencher of light energy,

wherein the CHOL moieties interact to bring D and Q into operative proximity, thereby enabling transfer of energy from D to Q.

51. (Currently Amended) The compound according to claim 50, wherein  $\text{R}^1$  and  $\text{R}^2$   $\text{R}^2$ -CHOL and  $\text{R}^3$ -CHOL are independently selected and have structures according to the formula:



wherein,

$\text{R}^{11}$  is a member selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

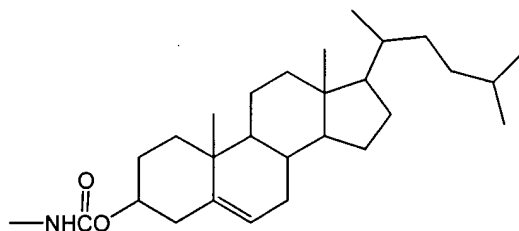
PEG is polyethylene glycol;

$\text{Y}^3$  is an organic functional group adjoining said PEG to said CHOL.

53. (Previously Presented) The compound according to claim 51 in which R<sup>11</sup> is substituted or unsubstituted alkyl.

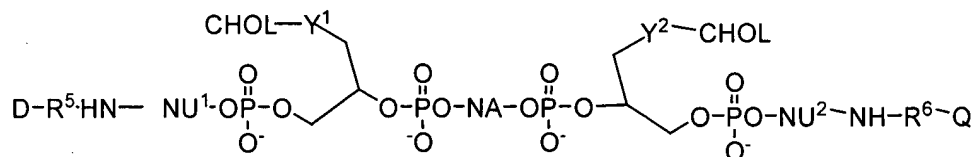
54. (Previously Presented) The compound according to claim 53, wherein R<sup>11</sup> is C<sub>1</sub>-C<sub>6</sub> substituted or unsubstituted alkyl.

55. (Previously Presented) The compound according to claim 51, wherein Y<sup>3</sup>-CHOL has the structure:



56. (Previously Presented) The compound according to claim 50, wherein Nu<sup>1</sup> and Nu<sup>2</sup> are nucleotides having an exocyclic amine group to which -R<sup>1</sup>-D and -R<sup>4</sup>Q are attached, respectively.

57. (Previously Presented) A compound having the formula:



wherein,

NA is a nucleic acid sequence;

Nu<sup>1</sup> and Nu<sup>2</sup> are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

Y<sup>1</sup> and Y<sup>2</sup> are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

R<sup>5</sup> and R<sup>6</sup> are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

D is a donor of light energy; and

Q is a quencher of light energy,

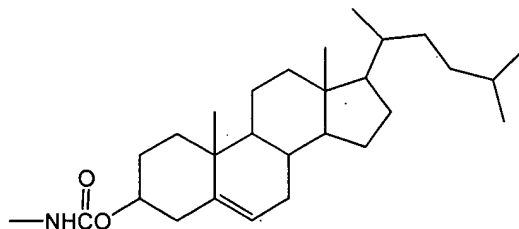
wherein each CHOL interacts with the other CHOL to bring D and Q into operative proximity, thereby enabling transfer of energy from D to Q.

58. (Previously Presented) The compound according to claim 57, wherein Y<sup>1</sup> and Y<sup>2</sup> are members independently selected from substituted or unsubstituted heteroalkyl.

59. (Previously Presented) The compound according to claim 58, wherein Y<sup>1</sup> and Y<sup>2</sup> are polyethylene glycol.

60. (Previously Presented) The compound according to claim 59, wherein said polyethylene glycol has from about 2 to about 20 ethylene glycol subunits.

61. (Previously Presented) The compound according to claim 57, wherein Y<sup>1</sup>-CHOL and Y<sup>2</sup>-CHOL have the structure:



- 1                    62.    (Previously Presented) The compound according to claim 57, wherein  
2    Nu<sup>1</sup> and Nu<sup>2</sup> are nucleotides having an exocyclic amine group to which -R<sup>5</sup>-D and -R<sup>6</sup>Q are  
3    attached, respectively.